

Circle Graph Lab

Use parts of a whole to find circle graph sections.

GRADE 7 • MA.7.DP.1.4

MA.7.DP.1.4 "Use proportional reasoning to construct, display and interpret data in circle graphs."

NAME _____

DATE _____

TURN PARTS INTO SECTORS

A circle graph shows a whole, and the whole circle has 360 degrees. Divide a category count by the total to find its fraction of the whole, then multiply by 360 to find the sector angle. Label each sector with its category and amount or percent.

WORKED EXAMPLE

Out of 40 students, 15 choose mystery books. What angle should the mystery-books sector have?

1. Write the fraction: $15/40 = 3/8$.
2. Multiply the fraction by the full circle:
 $3/8 \times 360 = 135$.
3. Use 135 degrees for the mystery-books sector.

Answer: 135 degrees

PRACTICE 6 problems

- 1** A circle graph represents 48 votes. A category received 12 votes. What fraction of the votes is this, and what is its sector angle?

ANSWER _____

- 2** A 72-degree sector represents 6 books. How many books does the whole circle represent?

ANSWER _____

- 3** What percent of a circle graph is represented by a 120-degree sector?

ANSWER _____

- 4** A club has 64 members. If 16 members choose chess, what angle should the chess sector have?

ANSWER _____

- 5** A category fills $5/12$ of a circle graph. What is the angle measure of its sector?

ANSWER _____

- 6** A circle graph shows game choices from 14 students who chose puzzles, 21 who chose cards, and 35 who chose board games. What angle should the board-games sector have?

ANSWER _____

APPLY IT Show your work

- 1** Jalen tracks 24 minutes of cycling, 12 minutes of stretching, and 12 minutes of walking during one workout. Make a circle graph of the workout. What angle should each activity have?

WORK SPACE

ANSWER _____

- 2** A school survey asks 60 students which lunchtime club they plan to try. Gaming gets 30 votes, art gets 18 votes, and coding gets 12 votes. Construct a circle graph by finding the angle for each club.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A circle graph represents 80 students' favorite after-school activity. Sports is 45% of the circle, music is $\frac{1}{4}$ of the circle, and reading is the rest. Find the number of students and sector angle for each activity. Explain how you know the three sector angles make a complete circle.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A circle graph represents 48 votes. A category received 12 votes. What fraction of the votes is this, and what is its sector angle?	1/4 and 90 degrees
2	A 72-degree sector represents 6 books. How many books does the whole circle represent?	30 books
3	What percent of a circle graph is represented by a 120-degree sector?	33 1/3%
4	A club has 64 members. If 16 members choose chess, what angle should the chess sector have?	90 degrees
5	A category fills 5/12 of a circle graph. What is the angle measure of its sector?	150 degrees
6	A circle graph shows game choices from 14 students who chose puzzles, 21 who chose cards, and 35 who chose board games. What angle should the board-games sector have?	180 degrees

PART 2 • APPLY IT

- Cycling: 180 degrees. Stretching: 90 degrees. Walking: 90 degrees.** The total workout time is 48 minutes. Divide each activity time by 48 and multiply by 360.
- Gaming: 180 degrees. Art: 108 degrees. Coding: 72 degrees.** Use 60 as the total number of votes. Find each fraction of 60, then multiply each fraction by 360.

CHALLENGE

Sports: 36 students and 162 degrees. Music: 20 students and 90 degrees. Reading: 24 students and 108 degrees. The angles total $162 + 90 + 108 = 360$ degrees, so they make one complete circle.

Accept equivalent fractions and percent forms when they are correct. Sector angles should total 360 degrees, and small labeled circle-graph sketches are acceptable for construction items.